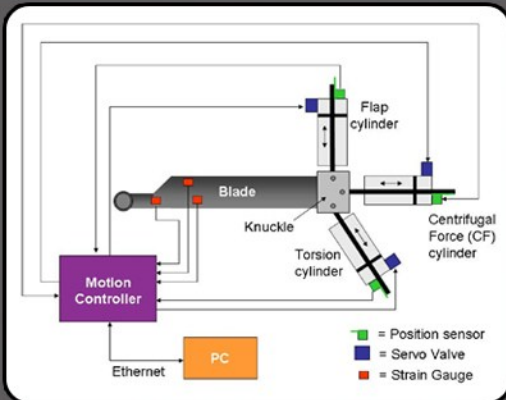


## Hydraulic Motion Controls Ensure That Helicopter Parts Pass The Test



### Summary:

Hydraulic test stands have been used to place real-world stresses on aerospace components since the 1950s. However, the addition of a Delta RMC 100 electronic motion controller allowed Helicopter Technology Co. to modernize HTC's testing system; resulting in higher throughput and closer, more complete monitoring of results. This retrofit project brought HTC's testing and parts into the 21<sup>st</sup> century.

### Challenge:

The safe life of rotor blades is verified in the laboratory by controlling the force of each hydraulic axis in the testing of rotor blades. One hydraulic axes pulls on the blade to simulate centrifugal loads, one tries to flap the blade and a third axes torques the blade.

### Solutions:

The fast multi-axis closed-loop controls in Delta's RMC 100 motion controller gave HTC both position and force feedback, going beyond the previously limited bandwidths and displacement measurements in the older system. Additionally during initial testing, Delta's responsive technical support enabled HTC to meet a tight timeline allowing HTC to look like a hero to their customer.

### Benefits:

Retrofitting their testing system enabled HTC to achieve quicker testing times, provided more structural data and testing schemes that now allow blades to fail "gracefully". The Delta RMC 100 has been easily adapted several times for different testing regimens, leaving HTC engineers confident that they will continue delivering quality products to the aerospace industry.

### At a Glance

- **Project:** Retrofitting helicopter test stands and improving test times.
- **Company:** Helicopter Technology Co.
- **Location:** Los Angeles, CA
- **Challenges:** Multi-axis testing under varying testing regimens
- **Solution:** Delta's RMC 100 offered more speed, better feedback and a timely system retrofit
- **Benefits:** HTC is confident they will continue to deliver quality products

**"We've been able to easily adapt the Delta motion controller for several different testing regimens; and are now confident that we can continue to deliver quality products to the aerospace industry."**

— Gary Burdorf, HTC Principal and Chief Engineer